

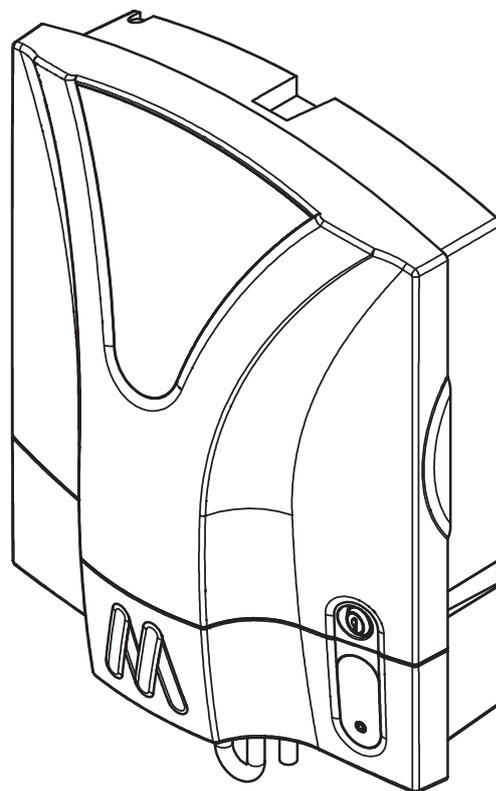
# OPERATOR MANUAL

MODELS: GP-DMI-STD-2, GP-DMI-MAINS-2



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## Chapter 1. INTRODUCTION

Thank you for purchasing Mechline's biological drain maintenance system. When correctly installed, and operated in accordance with this Operator Manual, it will provide many years of service.

A highly effective, maintenance-free and environmentally friendly alternative to stand alone grease traps. A unique formula which permanently breaks down Fats, Oils, Grease [FOGs] and starches keeping drains clear and free flowing.

A compact, wall-mounted dispenser automatically doses the patented multi-strain solution directly into the drain system without the need for you to remember. No blockages, no smells, just great peace of mind.



Mechline's drain maintenance system has been through rigorous testing, providing customers with the utmost confidence in its effectiveness and quality. We are proud to say that it is the only product of its kind in the UK to be **approved by the British Board of Agrément (BBA)** as a recognised form of effective grease removal.

SAVE THESE INSTRUCTIONS

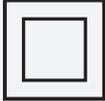
Chapter 2. RATINGS and SPECIFICATIONS

Model number	GP-DMI-STD-2	GP-DMI-MAINS-2
Region	UK/EU/US	UK
<b>BATTERY SPECIFICATIONS</b>		
	Mechline's <b>GP-DMI-STD-2</b> is powered by a specialised (non-standard) battery pack.	
Type	Non-rechargeable, Alkaline	N/A
Voltage	6 V	N/A
<b>ELECTRICAL SPECIFICATIONS</b>		
		Mechline's <b>GP-DMI-MAINS-2</b> is configured for the appropriate electrical supply.
Voltage	N/A	230 VAC
Frequency	N/A	50 Hz
Input supply requirements	N/A	230 V, 50 Hz, 1 phase, 3 A fuse
Cordset	N/A	2 Core 0.5mm <sup>2</sup> (L+N), Length: 3 metres
Input protection	N/A	Mechline's GP-DMI-MAINS-2 is to be connected to an appropriately rated Branch Circuit protected supply.
<b>DIMENSIONS &amp; WEIGHTS</b>		
Dimensions	Length (side to side): 410mm / 16 <sup>9</sup> / <sub>64</sub> inches  Depth (back to front): 186mm / 7 <sup>21</sup> / <sub>64</sub> inches  Height (not including dosing tube): 499mm / 19 <sup>5</sup> / <sub>8</sub> inches	
Weight (without fluid box fitted)	3.4 Kg / 7.5lbs	
Weight (with fluid box fitted)	8.9 Kg / 19.6lbs	

Chapter 3. PRODUCT SAFETY

3.1 SYMBOLS

The following important symbols are used in this product documentation:

MEANING/DESCRIPTION	SYMBOL/SYMBOLE	SIGNIFICATION/DESCRIPTION
<p><b>Dangerous Voltage</b></p> <p>To indicate hazards arising from dangerous voltages.</p>		<p><b>Tension Dangereuse</b></p> <p>Pour indiquer les dangers résultant des tensions dangereuses.</p>
<p><b>Totally Insulated</b></p> <p>To indicate the equipment is double insulated and therefore has no earth wire. All internal electrically energised components are totally enclosed within an insulated body that prevents any contact with “live” parts.</p>		<p><b>Isolation Intégrale</b></p> <p>L'appareil bénéficie d'une double isolation, et ne nécessite pas de prise de terre. Tous les éléments électriques internes sont insérés dans un coffret isolé, ce qui évite tout contact avec les parties sensibles.</p>
<p><b>Warning/Caution</b></p> <p>An appropriate safety instruction should be followed or caution to a potential hazard exists.</p>		<p><b>Avertissement</b></p> <p>Une consigne de sécurité appropriée doivent être suivies ou garde d'un danger potentiel existe.</p>
<p><b>Refer to Manual</b></p> <p>Refer to the relevant instructions detailed within the product manual.</p>		<p><b>Référez au Manuel</b></p> <p>Reportez-vous aux instructions applicables, indiquées dans le manuel du produit.</p>
<p><b>Wear Gloves</b></p> <p>To indicate that appropriate gloves should be worn.</p>		<p><b>Porter des Gants</b></p> <p>Pour indiquer que des gants appropriés doivent être portés.</p>

**3.2 BIO-FLUID MSGD5 - SAFETY DATA SHEET** *In compliance with Regulation (EC) No. 1907/2006 & 453/2010 (REACH)***1. IDENTIFICATION OF THE PRODUCT AND SUPPLIER**

- 1.1 Product identifier:** GreasePak MSGD5 (Part No.: GP-MSGD5)  
**1.2 Use of preparation:** Highly specialised biological preparation for breaking down grease and organic matter in waste water systems.  
**1.3 Distribution:** Mechline Developments Ltd, Unit 15 Carters Lane, Kiln Farm, Milton Keynes, England MK11 3ER T: +44 (0) 1908 261 511 F: +44 (0) 1908 261 522 E: info@mechline.com  
**1.4 Emergency telephone:** T: +44 (0) 1908 261 511 (9am-5:30pm GMT)

**2. HAZARDS IDENTIFICATION**

- 2.1 Classification of the mixture**  
**In compliance with directives 67/548/EEC, 1999/45/EC and their amendments:** Not classified.  
**2.2 Label Elements**  
**In compliance with directives 67/548/EEC, 1999/45/EC and their amendments:**  
Risk Phrases: Not classified.  
Safety Phrases: Not classified.  
**2.3 Other hazards**  
Preparation is biodegradable and not classified as dangerous for the environment.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

- 3.1 Mixtures - Composition:**  
**Ingredient** Alcohol  
**Cas no.** 67-63-0  
**EC no.** 200-661-7  
**Conc** 1-5%  
**Classification (EC 1272/2008)** SLOT SE 3: H336, Eye Irrit. 2: H319, Flam. Liq. 2: H225  
**Classification (67/548/EEC)** F Xi; R11, R36, R67

**4. FIRST AID MEASURES**

- 4.1 Description of first aid measures**  
**In the event of exposure by inhalation:** Remove victim to fresh air and seek medical attention if symptoms occur.  
**In the event of splashes or contact with the eyes:** Immediately flush eyes with plenty of water and seek medical attention if irritation develops.  
**In the event of splashes or contact with the skin:** Wash affected area with water.  
**In the event of swallowing:** Rinse mouth and throat with water and give sips of water to drink.  
**4.2 Most important symptoms and effects, both acute and delayed**  
**General information:** The severity of the symptoms described will vary dependent of the concentration and the length of exposure.  
**Inhalation:** No specific symptoms noted.  
**Ingestion:** No specific symptoms noted. Excessive ingestion may cause nausea.  
**Skin contact:** No specific symptoms noted.  
**Eye contact:** No specific symptoms noted.  
**4.3 Indication of any immediate medical attention and special treatment needed:** Treat symptomatically.

**5. FIRE FIGHTING MEASURES**

- 5.1 Extinguishing media:** This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.  
**Suitable methods of extinction:** Water, dry chemical or carbon dioxide.  
**Unsuitable methods of extinction:** None known.  
**5.2 Special hazards arising from the mixture:** None known.  
**5.3 Advice for fire-fighters:** Protective equipment for fire-fighters. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**6. ACCIDENTAL RELEASE MEASURES**

- 6.1 Personal precautions, protective equipment and procedures:** No special protective clothing. (See Section 8)  
**6.2 Environmental precautions:** Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.  
**6.3 Methods and materials for containment and cleaning up:** May be flushed to drains with plenty of water.  
**6.4 Reference to other sections:** For personal protection, see Section 8.

**7. HANDLING AND STORAGE**

- 7.1 Precautions for safe handling:** No specific usage precautions noted.  
**7.2 Conditions for safe storage, including any incompatibilities:** Store at moderate temperatures in dry, well-ventilated area. Keep in original container.  
**7.3 Specific end use(s):** The identified uses for this product are detailed in Section 1.2.  
**Usage Description:** See Product Information Sheet & Label for detailed use of this product.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

- 8.1 Control parameters**  
**Ingredient comments:** No exposure limits noted for ingredient(s).  
**8.2 Exposure controls**  
**Engineering measures:** Not relevant.  
**Personal protection measures, such as personal protective equipment**  
**Eye/face protection:** None required.  
**Hand protection:** Not required.  
**Body protection:** Not required.  
**Respiratory protection:** Not required.  
**Other Protection:** None required.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

- 9.1 Information on basic physical and chemical properties**  
**General information - Physical state:**

**Appearance** Liquid  
**Colour** Dark Green  
**Odour** Characteristic  
**Solubility** Soluble  
**pH** 4.5  
**Specific gravity** 1.02 g/cm<sup>3</sup>

- 9.2 Other information:** None.

**10. STABILITY AND REACTIVITY**

- 10.1 Reactivity:** No specific reactivity hazards associated with this product.  
**10.2 Chemical stability:** No particular stability concerns.  
**10.3 Possibility of hazardous reactions:** See Sections 10.1, 10.4 & 10.5.  
**10.4 Conditions to avoid:** There are no known conditions that are likely to result in a hazardous situation.  
**10.5 Incompatible materials:** No incompatible groups noted.  
**10.6 Hazardous decomposition products:** No hazardous decomposition products.

**11. TOXICOLOGICAL**

- 11.1 Information on toxicological effects**  
**Skin corrosion/skin irritation:** Not anticipated under normal conditions of use.  
**Serious damage to eyes/eye irritation:** Not anticipated under normal conditions of use.  
**Respiratory or skin sensitization:** Not anticipated under normal conditions of use.

**12. ECOLOGICAL INFORMATION**

- 12.1 Toxicity:** We have not carried out any Aquatic testing, therefore we have no Aquatic Toxicity Data specifically for this product. The Aquatic Toxicity Data, where provided by the raw material manufacturer for ingredients with aquatic toxicity, can be made available on request.  
**12.2 Persistence and degradability:** The preparation is readily biodegradable.  
**12.3 Bio-accumulative potential:** The product does not contain any substances expected to bio-accumulate.  
**12.4 Mobility in soil:** This preparation is highly dispersible in water. It is highly likely to distribute predominantly to the aqueous environment.  
**12.5 Results of PBT and vPvB assessment:** This product does not contain any PBT or vPvB substances.  
**12.6 Other adverse effects:** Not known.

**13. DISPOSAL CONSIDERATIONS**

- 13.1 Waste treatment methods**  
**Product Waste:** Unwanted product may be flushed with water to sewer.  
**Soiled packaging:** Rinse container and consign empty container to normal waste.

**14. TRANSPORT INFORMATION**

- General:** Not classified for Transport.  
**14.1 UN Number:** Not applicable  
**14.2 UN proper shipping name:** Not applicable  
**14.3 Transport Hazard class(es):** Not applicable  
**Land**  
**Inland Waterway Transport**  
**Sea**  
**Air**  
**14.4 Packing group:** Not applicable  
**14.5 Environmental hazards:** Not applicable  
**14.6 Special precautions for user:** Not applicable

**15. REGULATORY INFORMATION**

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:** Safety Data Sheet prepared in accordance with REACH Commission Regulation (EU) No 453/2010, which amends Regulation (EC) No 1907/2006.  
The product is as classified under CHIP Directive 1999/45/EEC Classification, Packaging & Labelling of Dangerous Preparations. Ingredients are listed with classification under both CHIP - Directive 67/548/EEC - classification, packaging & labelling of dangerous substances & GHS/CLP Regulation (EC) No 1272/2008 classification, labelling & packaging of substances & mixtures.  
**15.2 Chemical safety assessment:** Not applicable this product is a mixture.

**16. OTHER INFORMATION**

- Revision Comments:** This Material Safety Data Sheet has been prepared in accordance with REACH Commission Regulation (EU) No 453/2010, which amends Regulation (EC) No 1907/2006. There has been no change to the classification of the product. Product label requirements have been moved from Section 15 to Section 2 and Section 3 has a different layout.  
Compilation date: 20/05/13. Revision Issue 2  
**Risk Phrases in Full:** R11 Highly flammable.  
R36 Irritating to eyes.  
R67 Vapours may cause drowsiness and dizziness.

**Hazard Statements in Full:** H225 Highly flammable liquid and vapour.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

**Legal disclaimer:** The information provided is to the best of our knowledge correct and accurate. However, all data instructions and suggestions should be used only for guidance purposes. This company shall not be held liable for any damage resulting from handling or contact with the above product.

### 3.3 SAFETY INSTRUCTIONS

It is important to note that this unit is not intended for use by children or persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the unit by a person responsible for their safety.



ENGLISH	FRENCH
3.3.1 Ensure the unit is installed, operated and maintained by trained and authorised personnel.	3.3.1 Assurez vous que l'appareil est installé, utilisé et entretenu par un personnel autorisé et formé à cette tâche.
3.3.2 Children should not be allowed to play with the unit.	3.3.2 Ne laissez pas les enfants utiliser l'appareil.
3.3.3 The unit should be used as provided and not be tampered with or altered as the safety of the unit may be compromised.	3.3.3 L'appareil doit être utilisé dans l'état ou il est livré, sans être modifié d'aucune façon, au risque de nuire à la sécurité de l'appareil.
3.3.4 Particular care must be taken with mains-powered units. See below for additional guidance.	3.3.4 Les modèles branchés sur secteur doivent faire l'objet d'une surveillance particulière: reportez vous aux directives complémentaires ci dessous.
3.3.5 Before attempting servicing or maintenance tasks, the unit MUST be isolated from the power source and disconnected.	3.3.5 Avant toute intervention technique ou simple entretien, l'appareil doit être débranché.
3.3.6 Should a fault occur with the unit, immediately isolate and disconnect from the power source.	3.3.6 En cas d'incident quelconque de fonctionnement, débranchez immédiatement l'appareil.
3.3.7 Ensure safe storage/positioning of the electrical cabling when not in use. Should the electrical cable become damaged at any time, do NOT operate the unit.	3.3.7 Assurez vous de la sécurité du câblage de l'appareil tant au stockage qu'une fois en marche. Si vous constatez que le câblage est abimé, n'utilisez pas l'appareil.
3.3.8 Any modifications to the electrical supply or connections to the unit must only be carried out by a qualified electrician in accordance with the appropriate Codes of Practice.	3.3.8 Toute modification de source électrique ou de câblage doit être exclusivement opérée par un électricien dûment qualifié.
3.3.9 Replacement of the power cord must be carried out by Mechline or Mechline's service agent.	3.3.9 Le remplacement du câblage électrique ne peut être effectué que par un technicien de Mechline ou un agent agréé.
3.3.10 The mains socket or fused outlet must be installed in an accessible location close to the unit to enable disconnection.	3.3.10 La prise d'alimentation électrique, ou les fusibles devront être installés à proximité de l'appareil et être facilement accessibles.
3.3.11 Mechline recommends periodic inspection and verification of the integrity of the electrical connections in accordance with recommendations of BS 7671, IEE Wiring Regs.	3.3.11 Mechline recommande de vérifier régulièrement la qualité du câblage électrique, conformément à la directive en vigueur.

### 3.4 PRODUCT CONFORMITY

- 3.3.1 Mechline's GreasePak dosing unit conforms to the essential safety requirements of the Low Voltage Directive (LVD) 2006/95/EC, and Electromagnetic Compatibility Directive (EMC) 89/336/EEC and is manufactured in accordance with the harmonised standards EN 61000-6-3 Generic Emissions and EN 6100-6-1 Generic Immunity.

**Chapter 4. LOCATION ADVICE**

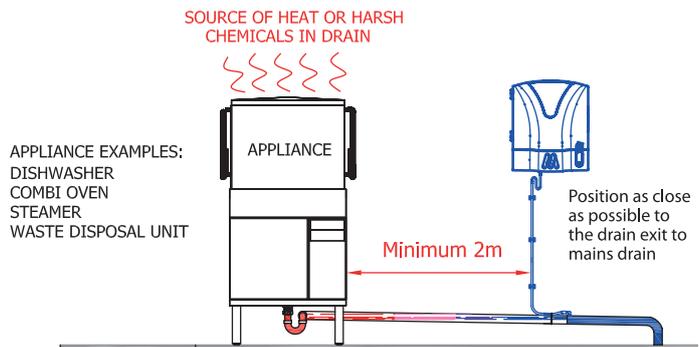
Mechline’s biological drain maintenance system can be used to prevent grease build up at a particular point in a drainage system, or in a drain line. It may therefore be necessary to install more than one dosing module in a kitchen if multiple risk areas are identified. Can be installed in conjunction with a grease trap or as a stand alone drain maintenance system.

Install the dosing module in a visible location and at a sensible working height where it will be easy for the operator to change the bio-fluid box.

**Failure to follow these guidelines could result in poor product performance.**

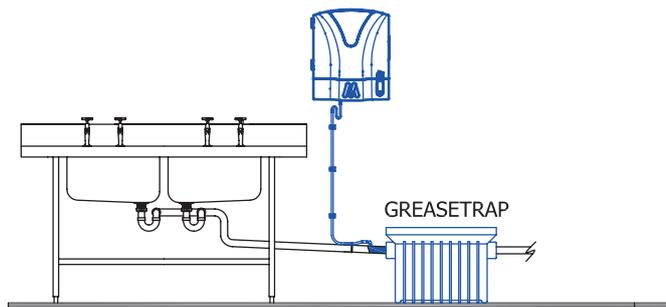
**4.1 EXAMPLE 1**

Install dosing point a minimum of 2 metres (6.5 feet) away from sources of harsh chemicals or excessive heat in the drain such as dishwashers, combination ovens or waste disposal units. If installed downstream from a water softener, ensure softener regeneration occurs prior to the unit dosing time each night.



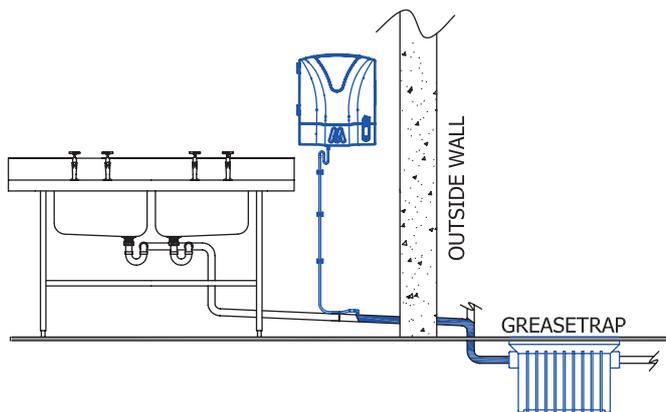
**4.2 EXAMPLE 2**

If treating a grease trap fitted inside the kitchen, connect the dosing point as close to the grease trap inlet as possible.

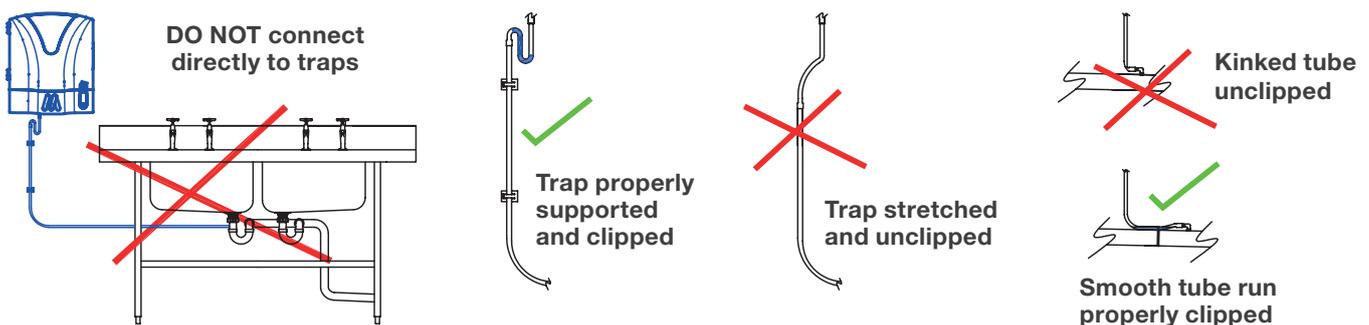


**4.3 EXAMPLE 3**

If treating a drainage system or grease trap which is sited outside of the kitchen, connect the dosing point as close as possible to where the drain leaves the kitchen.



**4.4 INSTALLATION DOs AND DON'Ts**



Chapter 5. INSTALLATION INSTRUCTIONS FOR BATTERY OPERATED MODEL 

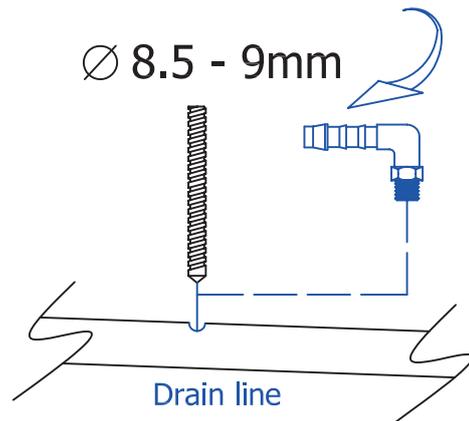
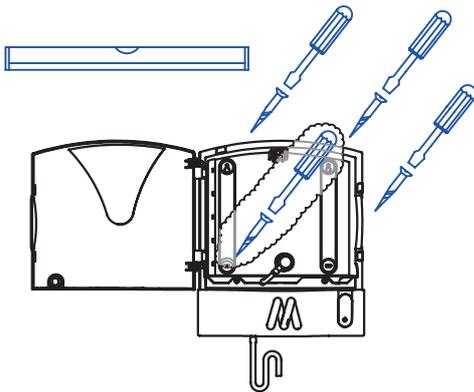


Refer to Chapter 4 of this manual, relating to **LOCATION ADVICE**

5.1 INSTALLATION REQUIREMENTS

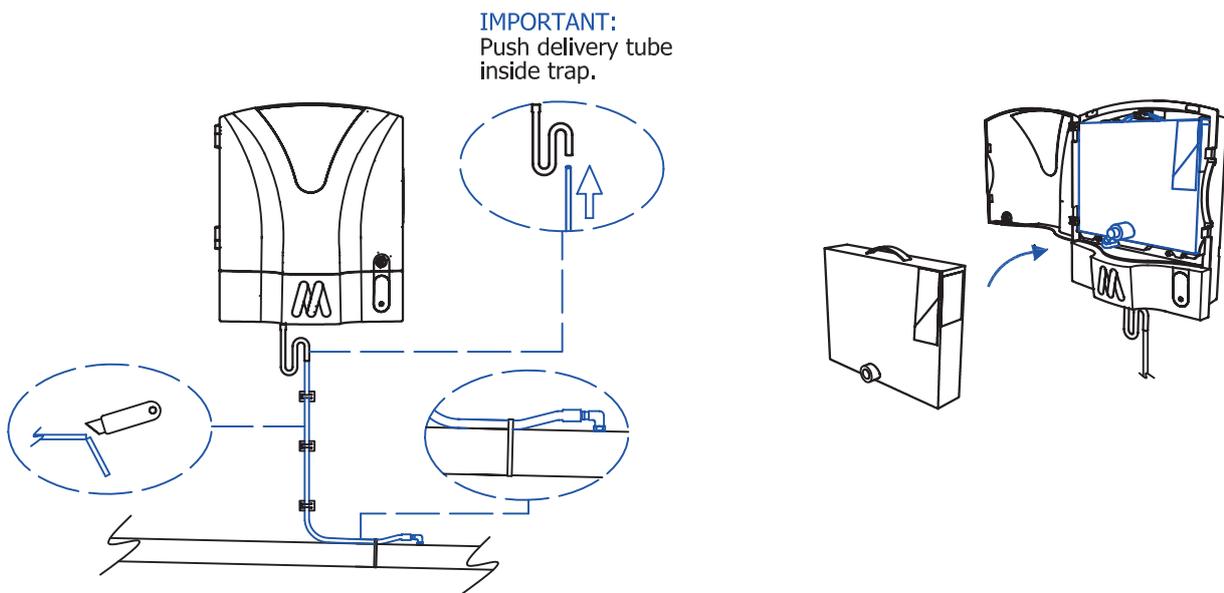
Mechline's biological drain maintenance system works by regularly dosing highly active bio-fluid into the drainage system, it is not a drain unblocking system. Existing drains must be cleaned and pressure washed prior to installation. Failure to do this could result in dislodged fat and grease blocking the drains further downstream.

5.2 INSTALLATION STEPS - MODEL: GP-DMI-STD-2



5.2.1 Level and securely fix the dosing module to the wall in the chosen location. Use 4 x fixings. Install at a sensible working height, between 1200-1500mm (4-5 feet) AFFL is recommended.

5.2.2 Drill an 8.5 - 9mm ( $\frac{21}{64}$  -  $\frac{11}{32}$  inches) hole in the top of the drain line to suit drain pipe material. Screw the elbow connector into the drain line. Use PTFE tape to seal the elbow thread.



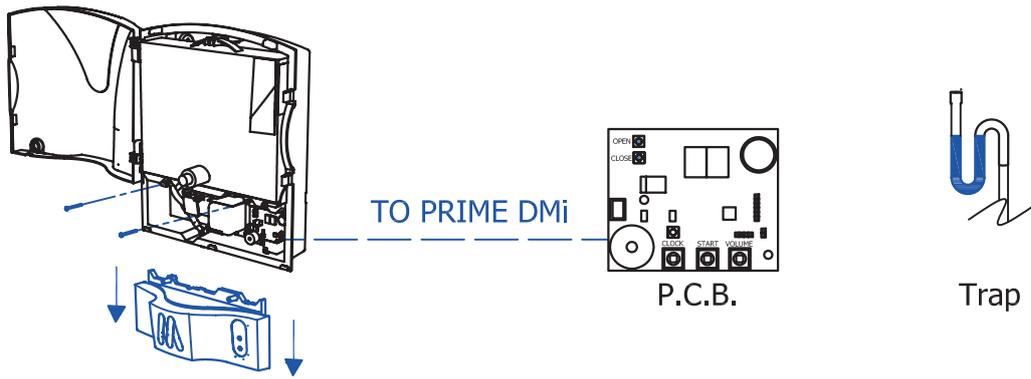
5.2.3 Cut the delivery tube to length and connect between the elbow and the trap on the dosing module.

**NOTE:** To help tube fit over the elbow, dip tube end in warm water.

Fix self-adhesive clips to secure tube. Tie wrap delivery tube to top of drain pipe. **DO NOT crush delivery tube.**

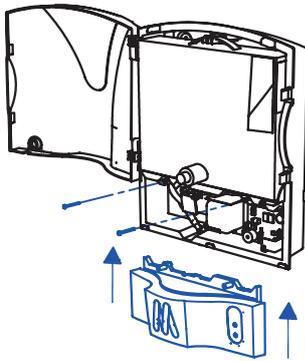
5.2.4 Hang a 5L (1.3 US gallons) box of bio-fluid in the dispenser.  Follow the box instructions to connect.

Cont'd...



5.2.5 Remove the 2 set screws as shown and pull the front cover downwards to remove.

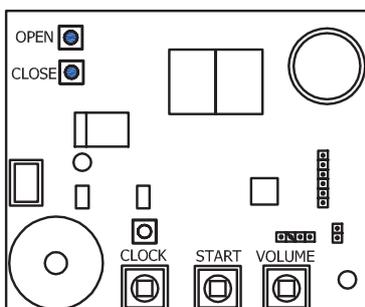
5.2.6 Press OPEN then CLOSE on the PCB. Fluid will flow then stop. You should be able to hear a CLICK sound as the valve opens and shuts. If you cannot hear a CLICK, try gently tapping the side of the valve while at the same time pushing the OPEN and then CLOSE buttons. This step is only required for the first fluid box.



5.2.7 Refit the front cover and close the door. Pass all documents & keys supplied with this dosing module to a responsible kitchen manager.



5.2.8 This unit is factory set to deliver a 'medium' dose of bio-fluid at 01:00 hrs each morning. Discuss with site management. In kitchens where a high level of cooking and processing takes place, it is advisable to change the dosing volume to 'high' or 'extra high'. Delivery time and delivery volume can be easily adjusted. If settings changes are required, refer to instructions below **or** inside the front cover. For guidance refer to Chapter 7 in this manual. With standard factory settings, 1x 5L (1.3 US gallons) bio-fluid box will last approximately 30 days.



6.2.10 **To adjust the clock:** Press the CLOCK (left) button. The display will show the hour (24hr clock). Hold for 5 seconds and until the current hour is displayed. You will hear a ticking sound as the display advances.

**To show/adjust the delivery start time:** Press the START (middle) button. The display will show the delivery start time. Hold for 5 seconds and until the desired start time is displayed. You will hear a ticking sound as the display advances.

**To show/adjust the delivery volume:** Press the VOLUME (right) button. The display will show the delivery setting. (1-4) Hold for 5 seconds and until the desired setting is displayed. You will hear a ticking sound as the display advances.

Chapter 6. INSTALLATION INSTRUCTIONS FOR MAINS-POWERED MODEL

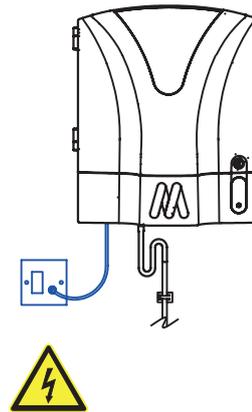
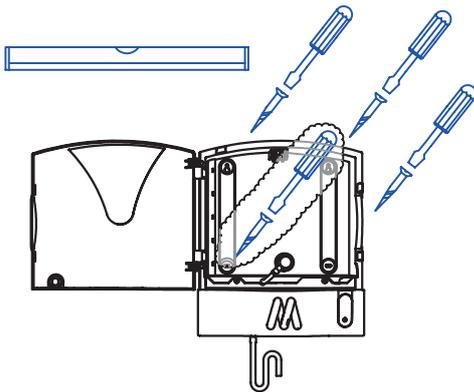


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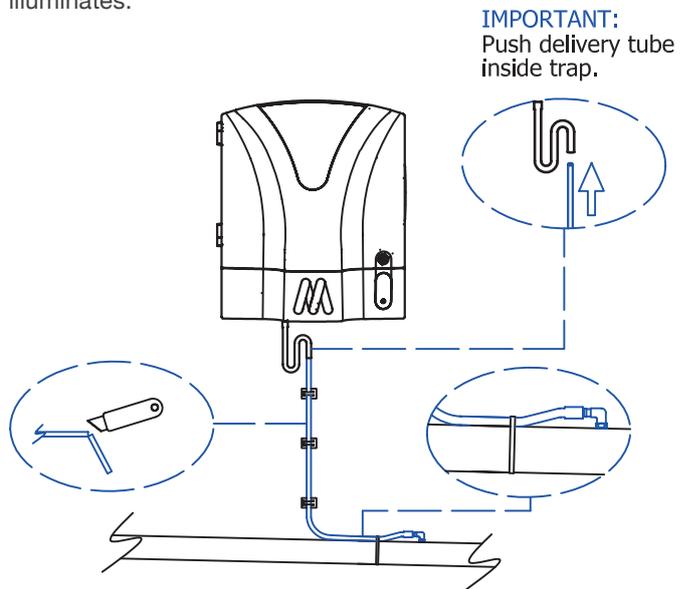
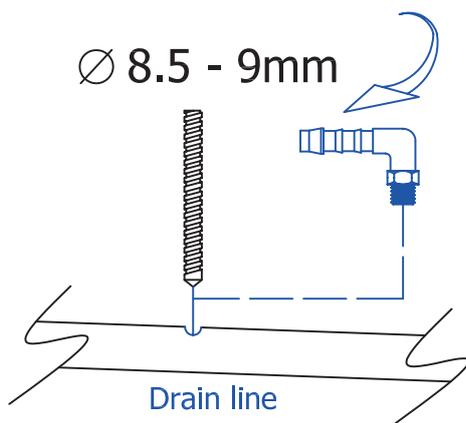
6.2 INSTALLATION STEPS - MODEL: GP-DMI-MAINS-2



Totally Insulated

6.2.1 Level and securely fix the dosing module to the wall in the chosen location. Use 4 x fixings. Install at a sensible working height, between 1200-1500mm (4-5 feet) AFFL is recommended.

6.2.2 Connect the electrical flex to a suitable switched spur outlet fitted with a 3A fuse. A qualified electrician should carry out this work. Turn on the power supply. Check that the 'Power On' light on the front cover illuminates.



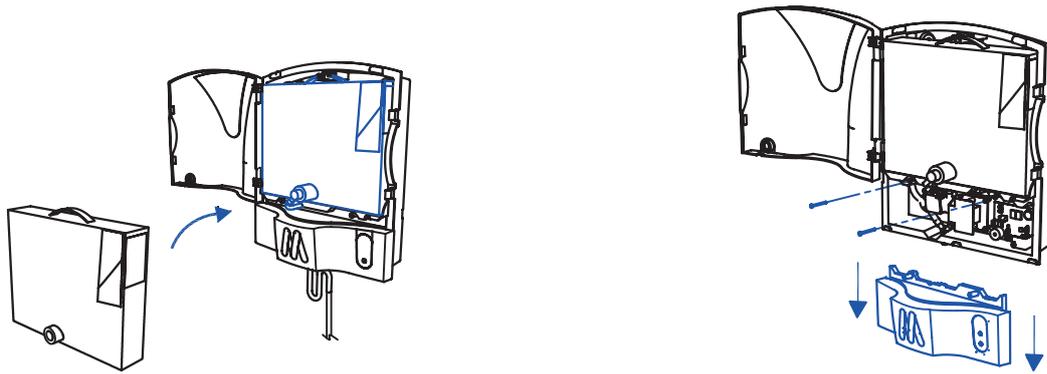
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6.2.4 Cut the delivery tube to length and connect between the elbow and the trap on the dosing module.

**NOTE:** To help tube fit over the elbow, dip tube end in warm water.

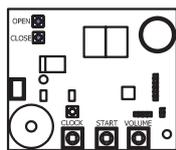
Fix self-adhesive clips to secure tube. Tie wrap delivery tube to top of drain pipe. **DO NOT crush delivery tube.**

Cont'd...



6.2.5 Hang a 5L (1.3 US gallons) box of bio-fluid in the dispenser.  Follow the box instructions to connect.

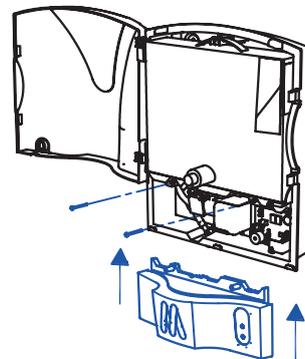
6.2.6 Remove the 2 set screws as shown and pull the front cover downwards to remove.



P.C.B.



Trap

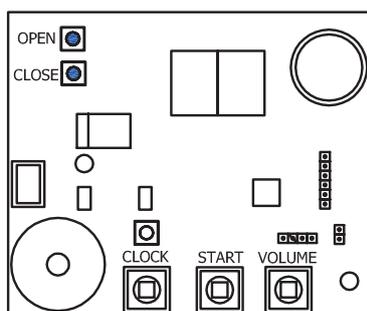


6.2.7 Press OPEN then CLOSE on the PCB. Fluid will flow then stop. You should be able to hear a CLICK sound as the valve opens and shuts. If you cannot hear a CLICK, try gently tapping the side of the valve while at the same time pushing the OPEN and then CLOSE buttons. This step is only required for the first fluid box.

6.2.8 Refit the front cover and close the door. Pass all documents & keys supplied with this dosing module to a responsible kitchen manager.



6.2.9 This unit is factory set to deliver a 'medium' dose of bio-fluid at 01:00 hrs each morning. Discuss with site management. In kitchens where a high level of cooking and processing takes place, it is advisable to change the dosing volume to 'high' or 'extra high'. Delivery time and delivery volume can be easily adjusted. If settings changes are required, refer to instructions below **or** inside the front cover. For guidance refer to Chapter 7 in this manual. With standard factory settings, 1x 5L (1.3 US gallons) bio-fluid box will last approximately 30 days.



6.2.10 **To adjust the clock:** Press the CLOCK (left) button. The display will show the hour (24hr clock). Hold for 5 seconds and until the current hour is displayed. You will hear a ticking sound as the display advances.

**To show/adjust the delivery start time:** Press the START (middle) button. The display will show the delivery start time. Hold for 5 seconds and until the desired start time is displayed. You will hear a ticking sound as the display advances.

**To show/adjust the delivery volume:** Press the VOLUME (right) button. The display will show the delivery setting. (1–4) Hold for 5 seconds and until the desired setting is displayed. You will hear a ticking sound as the display advances.

## Chapter 7. GUIDE TO DOSING LEVELS OF BIO-FLUID WITH CONVENTIONAL DRAINAGE SYSTEMS

Commercial kitchens discharge effluent high in fats, oils and grease (FOGs,) into the drainage system. This is unavoidable, as it is an integral part of the preparation, cooking and wash up operation.

A build up of organic material in the drainage system is a natural byproduct, which can cause major blockage problems for facilities managers if the problems occur inside the establishment, and for water authorities should these deposits pollute the sewer.

In some parts of the country statutes exist in planning law that require a grease trap to be fitted, and recent changes to building regulations require an 'effective means of grease removal' to be employed.

Two standards are in place for the 'correct sizing' and 'design' of grease traps (BS EN 1825-1:2004 and BS EN 1825-2:2002) but in reality these standards are rarely adhered to, with the grease trap size being determined by the space available.

Many other factors affect the effectiveness of grease traps, including the heat and level of surfactant content within the effluent, as temperature and chemicals can allow grease to pass straight through a grease trap, only to solidify and cause problems further down the system.

Correctly applied, and using the correct dosing levels, biological products can dramatically reduce grease trap maintenance, preventing grease build up and foul odour. In addition, if a drainage system has no grease trap fitted, the application of biological products into the drainage system can prevent the build up of organic solids.

The traditional method for suggesting dose levels is based on the number of meals served during the day. This method is somewhat flawed in that there are often too many after-installation variables to give an accurate and effective dosing rate. Variables can include:

- Menu items can change
- Staff practices and training levels can vary
- Staff changes
- Appliance changes

The tables shown below are based upon factors that can be measured at the time of installation, and that remain constant after installation, specifically the size of the grease trap and the length of the drainage run. It is assumed that all drain runs are correctly sized and are running at the correct gradient.

### 7.1 SYSTEMS **WITH** GREASE TRAPS FITTED

Grease Trap Size	Average Dose Level	Dosing Module Setting	Approximate Box Life
Up to 50 litres	150 ml a day	1	33 days
50-200 litres	166 ml a day	2	30 days
200- 300 litres	200 ml a day	3	25 days
Over 300 litres	312 ml a day	4	16 days

### 7.2 SYSTEMS **WITHOUT** GREASE TRAPS

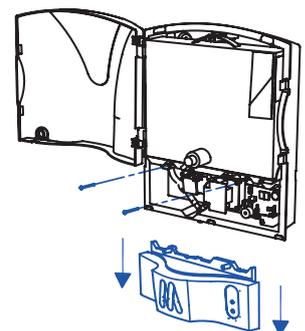
Approximate drainage run without a grease trap fitted is measured from the point where the FOG is discharged into the system (the appliance outlet) to the point where the drainage run connects to the main sewer.

Drainage Run	Average Dose Level	Dosing Module Setting	Approximate Box Life
Up to 15 metres	150 ml a day	1	33 days
15-50 metres	166 ml a day	2	30 days
50-75 metres	200 ml a day	3	25 days
Over 75 metres	312 ml a day	4	16 days

### 7.3 CHANGING THE DOSING LEVEL AND/OR DELIVERY TIME

The delivery time and volume can be changed to suit the individual kitchen requirements. Dosing modules are factory set to 'medium' (setting 2). In kitchens where a high level of cooking and processing takes place, it is advisable to change the dosing volume to 'high' (setting 3) or 'extra high' (setting 4).

If settings changes are required, follow the instructions stuck on the inside the front cover. Remove the 2 set screws as shown and pull the front cover downwards to remove. Instructions are also in this manual on page 8, section 5.2.9 and also page 10, section 6.2.10.



## Chapter 8. OPERATING INSTRUCTIONS

### 8.1 GENERAL ADVICE

The following advice is a general guideline for the operator of the unit. If any questions arise, please do not hesitate to contact Mechline [gpservice@mechline.com](mailto:gpservice@mechline.com) or your dealer.

- 8.1.1 Be sure the dosing module is left on once it has been put into operation. There is no on/off switch to operate.
- 8.1.2 To help the effectiveness of the system, and significantly help to maintain free flowing water both within the drains of the premises and in the sewerage system, **remember the following basic DOs and DON'Ts:**
- DO wipe and scrape plates, pans and utensils before washing.
  - DO collect waste oil in a suitable secure container.
  - DO arrange for oil to be collected by a licensed waste contractor.
  - DO use strainers in sink plug holes.
  - DO maintain Grease Traps and Enzyme Dosing equipment regularly.
  - DO NOT put cooking oil, fat or grease down the sink or into floor drains.
  - DO NOT put food scrapings into the sink.
  - DO NOT sweep food waste into the floor drains.
  - DO NOT pour boiling hot water down the sink to try to dissolve fat and grease. It does not work!
  - DO NOT pour bleach or harsh chemicals down the sink or into the drainage system.

### 8.2 FREQUENTLY ASKED QUESTIONS

#### 8.2.1 Is the bio-fluid safe for my kitchen?

Yes. The bio-fluid (GP-MSGD5) contains a blend of aerobic and facultatively anaerobic bacteria which have been specially selected to break down the organic material that is found in commercial kitchen waste. Armed with a powerful battery of grease-degrading enzymes, they are all classified by the Advisory Committee on Dangerous Pathogens (ACDP) as category 1, i.e. they are of extremely low or no hazard. Mechline's biological drain maintenance system is the only bioremediation system to receive BBA approval, meaning the system has been independently tested and found to be compliant with building and legislative requirements.

#### 8.2.2 How does the bio-fluid work?

For commercial kitchens to meet current legislation, they are obliged to have a system in place to manage their grease disposal. UK Building Regulations 2002 Edition incorporating 2010/13 amendments, state that:

*H1 FOUL WATER DRAINAGE: 2.21 Drainage serving kitchens in hot food premises should be fitted with a grease separator complying with BS EN 1825-1:2004 and designed in accordance with BS EN 1825-2:2002 or other effective means of grease removal.*

Mechline's bio-fluid is an 'effective means of grease removal' as required by the Building Regulations. It uses a blend of specially selected microorganisms that have been chosen for their ability to degrade fats, oils and grease (FOGs) in low oxygen conditions and varying pHs.

These bacteria produce a series of extra-cellular enzymes that break down organic matter, including lipase, which can very quickly transform fats (triglycerides) into glycerol and free fatty acids. Glycerol is very soluble in water and being a small molecule, can pass easily into the bacterial cells, where it is used either to build new cellular structures, or as a fuel to produce energy for growth.

The free fatty acids present more of a problem, as they are large insoluble molecules. The action of the lipase has only converted one type of large insoluble molecule (the triglycerides) into other large insoluble molecules (free fatty acids). Visually, in a drainage situation, the scale of the problem may have diminished or the characteristics of the fatty material may have changed at this point, but the problem will not yet have been fully resolved.

The specially selected bacteria in the bio-fluid are able to degrade these free fatty acids by a process known as  $\beta$ -oxidation, in which chunks are broken off the end of the fatty acid molecule. These chunks can again be used as a building block to produce new structures, or more usually, energy. The breakdown of fatty acids is not an instantaneous process, as the physical form of the fatty acids, being large and insoluble, means that it takes some time (commonly called "residence time") for the bacteria to "get to grips" with them. This is why the bio-fluid is dosed at 1:00am, when there is little or no water flow, allowing the bacteria time to do their work.

Once the fats are broken up by the lipase they cannot chemically reform back into triglycerides. The subsequent breakdown of the fatty acids through  $\beta$ -oxidation ensures the "grease," which may actually consist of a variety of insoluble materials, can pass through drainage systems without causing any problems traditionally associated with fats, oils and grease (FOGs).

Mechline's biological drain maintenance system effects the "removal of grease" from drainage systems—keeping drains clear and odour-free and meeting the requirements of the Building Regulations, using an environmentally friendly and non-hazardous fluid.

#### 8.2.3 Where can I install the dosing unit in my kitchen?

Please refer to Chapter 4 Location Advice.

#### 8.2.4 Can I use this system instead of a grease trap?

Mechline's biological drain maintenance system can be used either as a standalone drain maintenance system or in conjunction with a grease trap. Always check with your local authority, before installation, on the suitability of the system for your site's requirements. When used to dose into a grease trap, the trap will require emptying far less often.

#### 8.2.5 How should I clean my dosing unit?

Mechline's biological drain maintenance system is designed to be easy to clean, simply wipe over with a clean disposable cloth and fresh water. Do not use bleach, harsh cleaning chemicals or abrasives. Also see Section 10.1.

#### 8.2.6 I have lost the keys for my dosing module, can I get replacements?

Yes. The keys for all dosing units are interchangeable. Please contact Mechline or your dealer for a replacement set.

**8.2.7 Are there special storage or handling requirements for the bio-fluid? Does it have a shelf life?**

Mechline's bio-fluid is a perfectly safe class 1 fluid, and there are no special handling requirements. It should be stored in a cool, dry place away from direct sunlight and ideally at a temperature between 10°C and 30°C so the effective performance of the product is not compromised. The bio-fluid's shelf life is a minimum of 18-months, as long as it is stored as above.

**8.2.8 How will I know when the bio-fluid needs replacing? And where can I get replacement bio-fluid boxes?**

The dosing module will sound a alarm buzzer once every 15 minutes when the fluid box inside your dosing module needs replacing. It will only sound during daylight hours in order to preserve battery power.

For more bio-fluid please contact Mechline or your dealer. Sold in master boxes of 3x 5-Litre (part number GP-MSDS5). Please have the serial number of your dosing unit ready when you call. Always keep a spare box of bio-fluid in stock to avoid running out.

**8.2.9 How long should a 5L (1.3 US gallons) bio-fluid box last?**

On the factory setting (number 2), a 5L (1.3 US gallons) box of bio-fluid should last approximately 30 days. If the dosing unit is adjusted to deliver a higher dose (number 3 or 4), the fluid will not last as long. See Chapter 7 for dosing levels.

**8.2.10 I notice residual fluid in my bio-fluid box. Is it using up all the fluid? Have I changed the fluid too early?**

Only change the bio-fluid box when the buzzer sounds. This ensures the most efficient use of the full 5 litres per box. The design of the bag and valve is engineered to provide good flow, using gravity, to match the dosing level set by the module. It is very difficult to completely drain any bag of all its fluid, therefore, we slightly overfill each bag to compensate and make sure that every customer gets the full 5 litres from each bag. Drainage wedges are also fitted to the inside of each box to ensure that a 'V' shape is formed under the bag whilst the bag empties to assist draining.

**8.2.11 What procedures should be taken if the product leaks and/or comes into contact with skin, eyes, etc?**

Mechline's bio-fluid is a perfectly safe class 1 non-hazardous fluid. No harm will come from touching it or coming into contact with the fabric of the building - merely wash off the fluid with cool, clean water.

Avoid ingestion of liquid and avoid contact with eyes. In case of contact with skin or eyes, rinse thoroughly with clean cool water. Should eye irritation continue, seek medical advice.

In case of ingestion, DO NOT induce vomiting. Seek medical advice.

**8.2.12 Can I change the time when the dosing module doses the bio-fluid into the drain?**

The dosing module is factory set to dose at 1:00am, when there is little or no water flow, allowing the bacteria time to do their work. However this can be changed by removing the front cover under the unit door and following the instructions on the label inside. Unscrew and pull the front cover downwards to remove. See Section 7.3.

**8.2.13 Can I change the fluid dosing level on my dosing module?**

Yes. Refer to Chapter 7 for more information.

**8.2.14 How long does the battery last?**

In our battery operated models (GP-DMI-STD-2) the battery should last around 2 years. When the battery needs replacing the 'Low Battery' warning light will begin to flash. It will only flash between the hours of 07:00 - 20:00 when someone is likely to be around to see it, in order to preserve power. Contact Mechline or your dealer for a replacement battery pack (part number GP-BP) as soon as you see the 'Low Battery' light flashing.

If your dosing module has the words 'Power On' on the front cover, then it is the optional mains-powered model and will not require the battery changing.

**8.2.15 My building drains are not connected to mains sewage. Can I use the dosing unit with a remote aerobic or anaerobic (Septic) sewage system?**

Generally, Mechline's bio-fluid is helpful to these systems, and some information is provided below. For more advice, contact Mechline

**AEROBIC SYSTEMS:**

These tend to have three sections, a primary tank, an aerobic zone and a tertiary tank. The primary tank is where larger solids settle out, whereas the aerobic zone is where aerobic bacteria break down any organic solids. Aerobic conditions are maintained by the introduction of forced air or by the rotation of disks within the effluent. The tertiary tank allows for any final settlement before water is discharged.

If grease enters this system untreated it will quickly cause major overload to the primary tank, as it tends to float rather than settle out. Left unchecked this grease can then foul the aerobic zone either by coating the filter disks or blocking air gaps in the filter medium. This can result in severe system failure and all that implies.

The introduction of Mechline's bio-fluid into the effluent stream quickly breaks up the complex grease molecules into much smaller molecules and soluble compounds. This greatly reduces the problems described above and the chances of system failure.

**ANAEROBIC (SEPTIC) SYSTEMS:**

These systems rely upon the action of bacteria that do not require oxygen to break down organic solids, and are less complicated as they do not require the maintenance associated with the aeration of aerobic systems. However, the down-side is that they are slower in action and are not suited to larger sites.

The introduction of grease into a septic system would cause many problems, not least the fact that the crust on the top of a tank must be permeable to allow the passage of the gases created by the action of the bacteria. The presence of large quantities of grease would reduce crust mobility and therefore the effectiveness of the tank.

As with the aerobic system, the bacteria contained in bio-fluid break down the fats and grease found in commercial waste, thus greatly reducing the chances of grease-related compounds. In addition, the facultatively anaerobic bio-fluid bacteria added to the mix reduce sludge build-up and therefore tank emptying frequency.

Chapter 9. BBA APPROVED

Mechline’s biological drain maintenance system has been through rigorous testing, providing customers with the utmost confidence in its effectiveness and quality. We are proud to say that it is the only product of its kind in the UK to be approved by the **British Board of Agrément (BBA)** as a recognised form of effective grease removal. If you have any questions, please do not hesitate to contact Mechline [gpservice@mechline.com](mailto:gpservice@mechline.com) or your dealer.

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Agrément Certificate  
**11/4827**  
 Product Sheet 1

**MECHLINE CATERING EQUIPMENT**

**GREASEPAK BIOLOGICAL GREASE DEGRADATION SYSTEM**

**PRODUCT SCOPE AND SUMMARY OF CERTIFICATE**



This Certificate relates to the GreasePaK Biological Grease Degradation System, for use in drainage systems to convert fats, oils and grease into more soluble products and to minimise the risk of blockage.

**AGRÉMENT CERTIFICATION INCLUDES:**

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

**KEY FACTORS ASSESSED**

**Effectiveness** — the system is an effective means of removal of fats, oils and grease from waste water discharged from commercial kitchens and similar establishments (see section 5).

**Environmental information** — the system will have a positive environmental impact by reducing the discharge of fats, oils and grease into the sewer system (see section 6).

**Flow characteristics** — the system will not impair the flow characteristics of an existing drainage system and over a period of time should improve them (see section 9).

The BBA has awarded this Agrément Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément	<i>Brian Chamberlain</i>	<i>Greg Cooper</i>
Date of First issue: 7 April 2011	Brian Chamberlain Head of Approvals — Engineering	Greg Cooper Chief Executive

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at [www.bbacerts.co.uk](http://www.bbacerts.co.uk)

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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## Chapter 10. ON-GOING MACHINE REQUIREMENTS



Refer to Chapter 3 of this manual, relating to safety.

### 10.1 GENERAL CLEANING MAINTENANCE

Mechline's biological drain maintenance system is designed to be easy to clean, simply wipe over with a clean disposable cloth and fresh water after changing the bio-fluid box and as part of the general kitchen cleaning program.



- DO NOT use bleach, anti-bacterial agents or other harsh cleaning chemicals on or inside the machine.
- DO NOT try to jet or spray wash the inside or outside of the dosing module.
- NEVER pour floor washing or cleaning water into the drainage system and avoid using cleaning products containing biocide, limonene and terpenes in your day-to-day kitchen cleaning program.



Mechline's bio-fluid is a completely safe, Class 1 non-hazardous fluid. No harm will come from touching it, but if in doubt wear gloves when cleaning up any fluid spills.

### 10.2 OPERATIONAL TIPS

The on-going operation of the Mechline biological drain maintenance system requires certain fundamental tasks to be performed by staff, on a regular basis:

- Replace bio-fluid as soon as you hear the alarm buzzer, approximately every month. Always keep a spare box of bio-fluid in stock to avoid running out. Failure to replace bio-fluid could put your drains at risk and violate local building regulations.
- For battery operated models - replace battery pack as soon as you see the 'Low Battery' light flashing.

## Chapter 11. AFTER SALES and SERVICE SUPPORT

For technical assistance, please contact Mechline [gpservice@mechline.com](mailto:gpservice@mechline.com) or your dealer. Please have the dosing module's serial number to hand. The serial number can be found on the inside of the unit door.

### 11.1 WARRANTY (UK mainland only; for other regions, refer back to your dealer.)

Mechline's biological drain maintenance system has a one-year manufacturer's warranty from the date of invoice, against defective parts or faulty workmanship. Terms and Conditions apply.

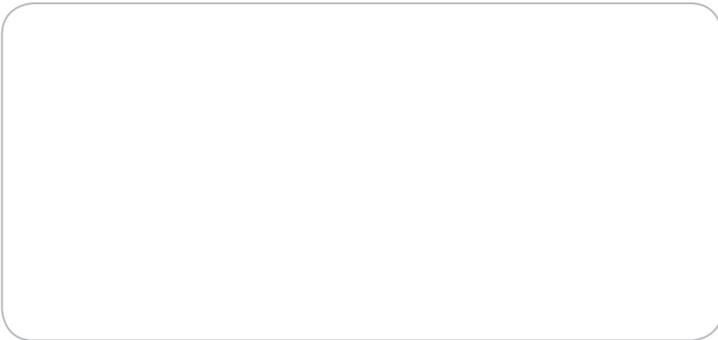
**NOTE:** *Bio-fluid and battery packs are basic 'consumable' goods and not subject to warranty.*

### 11.2 SPARE PARTS

For spare parts contact Mechline [gpservice@mechline.com](mailto:gpservice@mechline.com) or your dealer.

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Distributed by:



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